MOTIVATIONAL FACTORS THAT INFLUENCE TEACHER'S ACCEPTANCE OF VIRTUAL LEARNING ENVIRONMENTS

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ABSTRACT

This study used the Unified Theory of Acceptance and Use of Technology (UTAUT) which has been widely used to detect the level of acceptance of the technology in an organization. The study was conducted using a quantitative survey using UTAUT instruments. Data were collected using a questionnaire involving 364 secondary school teachers were selected randomly in the Central Zone and South Zone, Malaysia. Data were analyzed using descriptive and inferential analysis, namelythe Pearson correlation and regression analysis. The study found that there was a significant correlation between intrinsic motivation ($r = 0.61$) and extrinsic motivation ($r = 0.56$) with the intention to use among teachers. The study also found that there was a significant relationship between intrinsic motivation ($r = 0.51$) and extrinsic motivation ($r = 0.50$) with the use of the VLE among teachers. Further, the results of multiple linear regression analysis also proved that the intrinsic motivation and extrinsic motivation contributed significantly, namely 40.4 per cent of the intention to use and 30.1% for the use of VLE among teachers. This proves that motivation is important and needs to be studiedandcultivated among teachers to ensure acceptability and use of the VLE among teachers.

KEYWORDS: Unified Theory of Acceptance and Use of Technology (UTAUT), intrinsic motivation, extrinsic motivation.

Introduction

Educational revolution is now moving in tandem with the boom of information and communication technology. The transformation of teaching and learning methods (PDP) needs to be changed so that learning content is delivered more effective, accurate and efficient. In order to achieve developed nation status by 2020 as outlined in Vision 2020, Malaysia needs to adopt a first-class mind and have a high durability (Ministry of Education (MOE) 2006). In order to realize this agenda, Vision 2020 requires innovation in the educational curriculum to emphasize the application of methods, techniques and learning strategies, in particular the use of integrated Information and Communication Technology (ICT) as a reform in the context of teaching and learning, particularly, innovative web-based learning (Cavus&Momani 2009). Therefore, the government has created 1BestariNet involving 10, 000 primary and secondary schools, which are equipped with internet access and a world class Virtual Learning Environment (VLE) and will ensure that all teachers are competent in the use of the VLE by 2015 (Malaysia Education Blueprint -PPPM 2013 -2025).

The Malaysia Education Blueprint 2015-2025 has outlined three waves of ICT Plan in Education. The First Wave (2013 - 2015) aims to enhance basic ICT, efforts were made to ensure basic ICT infrastructure and competencyis always available in the whole system, and is not bound by any specific technology. This is to ensure that students and teachers have adequate access to ICT equipment; provide educational system with the learning platforms and broadband networks are adequate and ensure that all teachers are competent in handling ICT equipments. The second wave (2016 -2020) aims to introduce innovations in the use of ICT as Eduweb TV, find a solution in the form of ICT for the group in need, specifically to review the best practices for computer systems and reduce the ratio to 10: 1; Meanwhile, the third wave (2020-2025) also maintains that the widespread use of innovative ICT systems, ICT should be fully applied throughout the implementation of the pedagogy and curriculum in the educational system.

Innovation in education policy should be emphasized in shaping the education system that is progressive and innovative in order to induce changes and advances (Abd.Rahim 2002). Innovation in education can only succeed if teachers are highly skilled and able to use the application in the PDP. Practices and continuous trainingprovided to the teachers are needed to ensure ICT innovation can be applied continuously (Megat Aman Zahiri, Baharudin Aris &Jamalludin 2007). In line with the development of ICT, the change in pedagogy of learning has to focus on Virtual Learning Environment (VLE), which is designed to support learning through the internet network regardless of time and place (Stiles 2007; Craig 2007). The Malaysia Education Blueprint 2013-2025 clearly states that the MOE has been exploring a variety of innovations, especially regarding long distance learning and independent learning that can be used to expand access to high-quality teaching, regardless of location or skill level of the students. Introduction to innovation in education, especially the use of ICT in the development process of the PDP needs, both in terms of knowledge or skill (Zainuddin et al. 2008). To ensure that all ICT innovation can be exploited, teachers must have a strong determination to show credibility to adapt ICT innovation in the process of their PDP (Nor IzahNordinMohdSalleh&Norazah 2008). Thus, studies related to VLE innovation should be carried out, especially at the school level.

According to Davis (1989), a study to identify the individual factors in terms of acceptance and use of information technology has been carried out since the introduction of the personal computer. The study shows that the factors of intrinsic motivation and extrinsic motivation affect the acceptance of information technology(Davis, Bagozzi, &Warshaw 1992; Venketesh 1999). Intrinsic motivation is the tendency of individuals reflexively to learn and understand something. Whereas, extrinsic motivation is a reflex of external control or internal control (Bandura 2002). Based on the complexity of identifying or understanding individual or organization in the acceptance of any technology, Venkatesh, Morris, Davis and Davis (2003) have introduced the Unified Theory of Acceptance and Use of Technology (UTAUT) to develop a description of the acceptance of technology, in terms of the social, psychological and technical diversity.

UTAUT has presented a solid framework in explaining the relationship between the constructs with the use and the intention to use information technology(Pynoo et al, 2011; Shin et al. 2011; Venkatesh et al., 2003). According to Pynoo et al (2011); Shin, Shin, Choo, &Beom (2011) stated that the study on the use of e-learning motivation at the workplace is less carried out. Recent studies on technology acceptancemay be different when carried out in different cultural settings(Raja & He 2006). Although UTAUT have demonstrated the validity and consistency in maintaining UTAUT theory, but mostly in the context of the United States, the use of UTAUT in different environment requires further study. For that purpose, the UTAUT theory used to measure the level of intrinsic motivation and extrinsic motivation to the intention to use and the use of virtual learning environment among teachers in Malaysia.

Research Questions:

1. Is there a significant relationship between intrinsic motivations with the intention to use among teachers?

2. Is there a significant relationship between extrinsic motivations with the intention to use among teachers?

3. Is there a significant relationship between intrinsic motivations with the use of VLE among teachers?

4. Is there a significant relationship between extrinsic motivations with the use of VLE among teachers?

5. To what extent the contribution of intrinsic motivation and extrinsic motivation toward the construct associated with the intention to use among teachers?

6. To what extent the contribution of intrinsic motivation and extrinsic motivation towardthe construct associated with the use of VLEamong teachers?

Materials and Methods:

The researchers have used the technique of cluster sampling, stratified sampling or (multistage sampling), which is a series of large sampling of the unit to a smaller unit (Sullivan, 2001; Neuman, 2006). This technique was chosen because the population is not homogeneous (heterogeneous) in terms of gender, race, age, number of schools, number of teachers and course attendance. The

study involved a sample of 364 teachers in primary and secondary schools in the Central Zone and South Zone, namely Selangor, Negeri Sembilan and the Federal Territory of Kuala Lumpur.

The instrument used the questionnaire items selected from UTAUT (Venkatesh et al., 2003) using a 5-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree) that includes performance expectancy, effort expectancy, attitudes, anxiety, social influence, facilitating condition and intention to use. Whereas, the use of VLE items designed by the researchers. All items from UTAUT have shown the level of reliability and validity that can be accepted (Pynoo et al. 2011; Wang et al. 2009). Based on the study of the construct contained in UTAUT, it was divided into two parts, namely, effort expectancy, attitudes and anxiety as the construct of intrinsic motivation, while the performance expectancy, social influence and facilitating condition as the construct of extrinsic motivation. The researchers also conducted a pilot study involving 57 respondents. Each construct showed the higher reliability Alpha Cronbach, namely between 0.761 and 0.949.

The questionnaire was distributed to 600 respondents, who were selected from 18 schools. To ensure that the questionnaires are received by the respondents, the researchers sent the questionnaires to a representative in every the selected schools. All questionnaires were collected within 4 weeks by mail. To ensure that the questionnaires are returned, the researchers keep in touch with representatives in every school involved.

Results:
There were only 364 data collected after carrying out the cleaning process to analyze the data further. From the number of respondents, A total of 80 respondents are male teachers (22.9%) and 284 respondents are female teachers (78.1%). In terms of race, the majority of teachers are Malays, namely a total of 327 respondents (89.8%) followed by 19 of Chinese teachers (5.2%), 15 of Indian teachers (4.1%) and only 3 teachers consist of other races (0.8In terms of age, a total of 43 teachers aged less than 30 years (11.8%), a total of 183 teachers aged between 31 years to 40 years (50.3%) and 139 teachers over the age of 41 years (37.9%).

In terms of teacher's experience in applying the VLE, namely Learning Management System (LMS), the study showed a total of 286 teachers (78.6%) only have experience in using LMS less than six months, while a total of 52 teachers (14.3%) experienced using LMS between six months to two years and only 26 teachers (7.1%) who have experience using LMS for more than two years. In terms of FrogVLE, the findings showed a total of 103 teachers (28.3%) experienced using FrogVLE less than six months, 238 teachers (65.4%) experienced using FrogVLE between six months to two years, while a total of 23 teachers (6.3.8%) experienced using FrogVLE more than two years.

The relationship between intrinsic and extrinsic motivation with the desire to use
Pearson correlation analysis results showed the existence of positive and significant relationship between the construct of intrinsic motivation (r (364) = 0.61, p = 0.000 (p <0.01)) with the desire to use VLE among teachers. Next, this findings showed that the construct of extrinsic motivation also have a positive and significant relationship between the construct of intention to use (r (364) = 0.56, p = 0.000 (p <0.01)) among teachers. According to Alias Baba (1992) r = 0:41 to r = 0.6 showed a modest relationship and r = 0.61 was classified as a strong relationship. This means intrinsic motivation has a strong relationship with the intention to use. The extrinsic motivation has a low relationship with the intention to use among teachers. **(See Table 1)**

	Table 1. Pearson Correlation between constructs										
	Construct	**Mean**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Performance expectancy	3.67	.4968	1							
2	Effort expectancy	3.49	.503	.702**	1						
3	Social Influence	3.01	.378	.544**	.547**	1					
4	Facilitating condition	3.53	.516	.574**	.650**	.625**	1				
5	Attitudes	3.58	.467	.749**	.743**	.592**	.648**	1			
6	Anxiety	3.09	.610	.171**	.159**	-.033	.114*	.171**	1		
7	Intention to use	3.75	.458	.539**	.575**	.425**	.473**	.628**	.182**	1	.
8	Use	2.49	.889	.395**	.483**	.346**	.516**	.471**	.210**	.352**	1

Relationship between intrinsic and extrinsic motivation with the use of VLE
For the use of VLE among teachers, Pearson correlation analysis results showed the existence of positive and significant relationship between the construct of intrinsic motivation (r (364) = 0:51, p = 0.000 (p <0.01)) with the use of VLE among teachers. The findings also showed the construct of extrinsic motivation has a positive and significant relationship with the intention to use (r(364) = 0.50, p=0.000 (p<0.01)) among teachers. This suggests that intrinsic motivation and extrinsic motivation has a simple relationship (Alias Baba, 1992), positive and significant with the intention to use among teachers.**(See Table 2 and Figure 1)**

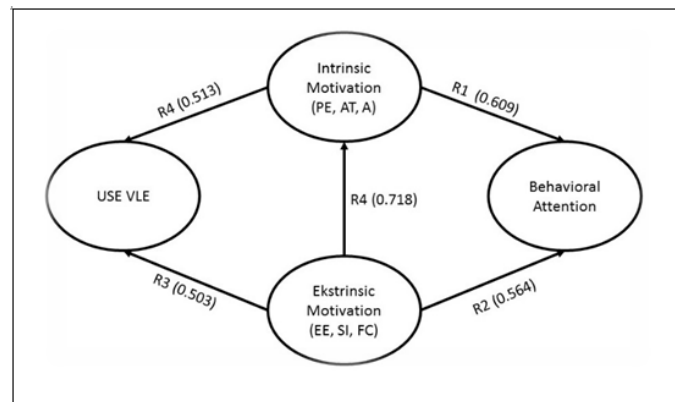|	**Table 2. Pearson correlation between the construct of intrinsic motivation, extrinsic motivation, the intention to use and use of the VLE among teachers**			
	Construct	**1**	**2**	**3**	**4**
1	Intrinsic	1			
2	Extrinsic	.72(**)	1		
3	Intention to use	.61(**)	.56(**)	1	
4	Use of the VLE	.51(**)	.50(**)	.35(**)	1

Figure 1 Correlation between the study construct

The contribution of intrinsic motivation and extrinsic motivation on the intention to use among teachers.
Regression analysis showed that intrinsic motivation and extrinsic motivation contributed significantly to the intention to use, $F_{(2, 361)} = 122,369$, p = 0.000). The regression model can explain that 37.1% of the intention to use among teachers contributed by the variation of intrinsic motivation, while only 3.3% of the variation of extrinsic motivation. To see the importance of this model from a practical standpoint, the effect size was taken into account. Cohen (1988) stated that if the size of r^2 is less than 0.01, then it is considered small, 0.09 is medium and 0.25 is considered large. Therefore, the value of R^2 = 0:41 interpreted as a large effect size.

To see the relative contribution of each variable with the intention to use VLE among teachers, a detailed

review was carried out through the standard regression weights (β) for each variable. It is found that these two variables significantly contributes to the variation of the intention to use, namely intrinsic motivation have contributed significantly and the largest one (β=0.422, t= 7.219, p=0.000) p<0.05,

whereas, extrinsic motivation also contributed significantly (β=0.261, t= 4.468, p=0.000) p<0.05. This can be interpreted when intrinsic motivation and extrinsic motivation increased by one unit, the score of intention to use will be increased between 0.422 and 0.261 units.

The contribution of intrinsic motivation and extrinsic motivation on the use of VLE among teachers.

Regression analysis showed intrinsic motivation and extrinsic motivation also contributed significantly on the use of VLE, $F_{(2, 361)} = 77.71$, p = 0.000). The regression model can explain that 26.3% of the variation in the use of VLE among teachers contributed by variation of intrinsic motivation, while only 3.8% of the variation of extrinsic motivation. To see the importance of this model from a practical standpoint, the effect size was taken into account. Cohen (1988) stated that if the size of r^2 is less than 0.01, then it is considered small, 0.09 is medium and 0.25 is considered large. Therefore, the value of R^2 = 0:26 interpreted as a large effect size.

To see the relative contribution of each variable on the use of VLE among teachers, a detailed review was carried out through the standard regression weights (β) for each variable. It is found two variables significantly contributes to the variation on the use of VLE, namely intrinsic motivation contributed significantly and the largest one (β=0.313 t= 4.952, p=0.000) p<0.05, whereas, extrinsic motivation also contributed significantly (β=0.278, t= 4.401, p=0.000) p<0.05. This can be interpreted when intrinsic motivation and extrinsic motivation increased by one unit, the scores will be increased between 0.313 and 0.278 units.

These findings suggested that intrinsic motivation and extrinsic motivation directly affects to the intention to use significantly and the use of VLE among school teachers.

Discussion:

This study was carried out to identify the role of intrinsic motivation and extrinsic motivation toward the acceptance and use of Virtual Learning Environment (VLE) among school teachers in the Central Zone and South Zone in Malaysia. The findings indicate that intrinsic motivation and extrinsic motivation have a significant impact on the intention to use and the use of VLE. A study conducted by (Baard, Deci & Ryan, 2004; Black & Deci, 2000) states that intrinsic motivation can improve performance, continuous efforts and satisfaction in their work. This study also supports and reinforces previous studies that found that intrinsic motivation has a significant relationship with the intention of teachers to use VLE. Research shows that individuals who are intrinsically motivated are more likely to engage in challenging activities; actively involved and enjoy the learning; take a deep approach to learning; and showed improved performance, persistence, and creativity (Brophy, 2010; Ryan & Deci, 2000b).

The findings also show that there is a significant relationship between extrinsic motivation and the intention to use. This contrasts with findings by Yoo et.al (2012) which stated that the extrinsic motivation does not impact directly towards the intention to use. Lederer, Maupin, Sena and Zhuang (2000) believe that facilities used by individuals can improve the performance and the intention to use. This was also acknowledged by Davis et al. (1998), which stated that the trust can increase the intention to use the technology. Extrinsic motivation such as performance expectancy can affect the intention to use via consumer attitudes. Users also enjoy using the VLE when they feel the benefit as well as the support of the administrator. This is because social influence is one of the extrinsic motivation factors that can influence the attitudes of teachers and act as intrinsic motivation towards the acceptance of VLE (Roca and Gagne 2008).

Previous findings showed that interpersonal factors such as gifts, communication and feedback can increase and affect the intrinsic motivation as external environmental factors contribute to the credibility of the individual or expressed satisfaction for the individual (Ryan and Deci 2000). Based on the use of UTAUT constructs, it showed that intrinsic motivation and extrinsic motivation affect directly towards the intention to use and the use of VLE among teachers. The results also showed that intrinsic motivation affects the intention and the use of VLE. This is because the intrinsic motivation influences the attitudes of teachers in accepting the VLE.

Based on the findings, a number of practical implications can be made to help the teachers to accept the VLE. Firstly, the researchers suggest the management should consider ways to facilitate the use of VLE among teachers, with a focus on the elements of the intrinsic motivation and extrinsic motivation. Secondly, in order to increase the acceptance and the use of VLE among teachers, external factors such as supporting facilities (internet connection, the number of computers), social influence (support from partners and management) and reward viewed more easily manipulated to increase the intrinsic motivation in integrating the VLE.

This study has some limitations. Firstly, this study was based on the perception of teachers voluntarily towards questionnaires distributed to them. Secondly, the study sample consisted of teachers in the Central Zone and the South Zone in Malaysia, which are involved in both projects, namely the Moodle project organized by the Educational Technology Division, Ministry of Education and the VLE Frog Project under BestariNet. Thus, the data obtained from this study should be interpreted carefully as it does not reflect the acceptance of VLE in Malaysia as a whole. Further studies should focus on the use of VLE in Malaysia as a whole and measures to increase the use of VLE among teachers and students.

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